# **Environment Testing TestAmerica**

# **ANALYTICAL REPORT**

Eurofins TestAmerica, Houston 6310 Rothway Street Houston, TX 77040 Tel: (713)690-4444

Laboratory Job ID: 600-185597-1

Client Project/Site: WW-20190516-002-Day14

Revision: 1

For:

Cardno, Inc 970 Wedgewood Drive Crystal Lake, Illinois 60014

Attn: Ms. Cheryl Hennessy

Authorized for release by:

6/9/2019 7:00:29 PM
Dean Joiner, Project Manager II

(713)690-4444

dean.joiner@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### **Case Narrative**

Client: Cardno, Inc

Project/Site: WW-20190516-002-Day14

Job ID: 600-185597-1

Job ID: 600-185597-1

Laboratory: Eurofins TestAmerica, Houston

**Narrative** 

Job Narrative 600-185597-1

#### Comments

This report was revised 6-9-19 updating the reporting limits for the 608 analysis performed in TA Houston in regard to dicofol.

The sample was received on 5/17/2019 3:38 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

#### Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. No TAT was stated on the COC. A 5 day TAT was entered based on recent history of previous jobs.

#### GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC/IC

Method(s) 531.1: The laboratory control sample (LCS) associated with analytical batch 680-571548 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method(s) 531.1: The continuing calibration verification (CCV) associated with batch 680-571548 recovered outside acceptance criteria. low biased, for Carbaryl. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

Method(s) 531.1: This sample failed high for ISTD and was a non detected. This sample has been reported. WW-20190516-002-Day14 (600-185597-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) 608: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 600-265445 and analytical batch 600-265507 recovered outside control limits for the following analytes: Dicofol. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Organic Prep

Method(s) 608: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: WW-20190516-002-Day14 (600-185597-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## **Method Summary**

Client: Cardno, Inc

Project/Site: WW-20190516-002-Day14

Method **Method Description** Protocol Laboratory 625 Semivolatile Organic Compounds (GC/MS) 40CFR136A TAL CC Organotins/GCMS Organotins (GC/MS) TAL SOP **TAL BUR** 608 Organochlorine Pesticides in Water 40CFR136A TAL HOU 531.1 Carbamate Pesticides (HPLC) **EPA** TAL SAV 3510C Liquid-Liquid Extraction (Separatory Funnel) SW846 TAL BUR 608 Liquid-Liquid Extraction (Separatory Funnel) 40CFR136A TAL HOU CWA\_Prep\_CLLE Liquid-Liquid Extraction (Continuous) 40CFR136A TAL CC

#### **Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### **Laboratory References:**

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL CC = Eurofins TestAmerica, Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Job ID: 600-185597-1

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# **Sample Summary**

Client: Cardno, Inc

Project/Site: WW-20190516-002-Day14

Job ID: 600-185597-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-185597-1	WW-20190516-002-Day14	Water	05/16/19 11:30	05/17/19 15:40	

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## **Client Sample Results**

Client: Cardno, Inc Job ID: 600-185597-1

Project/Site: WW-20190516-002-Day14

Lab Sample ID: 600-185597-1 Client Sample ID: WW-20190516-002-Day14

Date Collected: 05/16/19 11:30 **Matrix: Water** 

Date Received: 05/17/19 15:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.861	U	10.0	0.861	ug/L		05/23/19 15:00	05/24/19 15:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	83		26 - 120				05/23/19 15:00	05/24/19 15:28	1
2-Fluorobiphenyl	76		22 - 120				05/23/19 15:00	05/24/19 15:28	1
Terphenyl-d14	81		10 - 134				05/23/19 15:00	05/24/19 15:28	1
Phenol-d5 (Surr)	75		10 - 120				05/23/19 15:00	05/24/19 15:28	1
2-Fluorophenol	68		10 - 120				05/23/19 15:00	05/24/19 15:28	1
2,4,6-Tribromophenol	80		24 - 131				05/23/19 15:00	05/24/19 15:28	1
Method: Organotins/GCM	AS - Organotins	(GC/MS)							
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	0.0469	U	0.0469	0.0469	ug/L		05/22/19 13:35	05/30/19 14:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tripentyltin	84		15 - 150				05/22/19 13:35	05/30/19 14:14	
Method: 608 - Organochl	orine Pesticides	in Water							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicofol	0.208	U *	0.208	0.208	ug/L		05/20/19 15:01	05/21/19 15:28	1
Mirex	0.0208	U	0.208	0.0208	ug/L		05/20/19 15:01	05/21/19 15:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	99		32 - 143				05/20/19 15:01	05/21/19 15:28	1
DCB Decachlorobiphenyl	95		36 - 144				05/20/19 15:01	05/21/19 15:28	1
Method: 531.1 - Carbama	ite Pesticides (H	PLC)							
Analyte	· · · · · · · · · · · · · · · · · · ·	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	0.250	U *	2.50	0.250	ug/L		<del></del>	05/25/19 02:25	1

## **Definitions/Glossary**

Client: Cardno, Inc Job ID: 600-185597-1

Project/Site: WW-20190516-002-Day14

#### **Qualifiers**

#### **GC/MS Semi VOA**

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

#### **GC Semi VOA**

LCS or LCSD is outside acceptance limits.

U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier Qualifier Description

\* LCS or LCSD is outside acceptance limits.

U Indicates the analyte was analyzed for but not detected.

#### **Glossary**

Abbreviation 1	These commonly us	ised abbreviations may	y or may not be	present in this report.
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Eisted under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry)
MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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Project/Site: WW-20190516-002-Day14

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Matrix: Water Prep Type: Total/NA** 

_		Percent Surrogate Recovery (Acceptance Limits)						
		NBZ	FBP	TPHL	PHL	2FP	TBP	
Lab Sample ID	Client Sample ID	(26-120)	(22-120)	(10-134)	(10-120)	(10-120)	(24-131)	
600-185597-1	WW-20190516-002-Day14	83	76	81	75	68	80	
LCS 560-162934/2-A	Lab Control Sample	79	77	82	75	68	79	
LCSD 560-162934/3-A	Lab Control Sample Dup	80	77	84	77	74	83	
MB 560-162934/1-A	Method Blank	81	75	82	75	71	72	

#### **Surrogate Legend**

NBZ = Nitrobenzene-d5

FBP = 2-Fluorobiphenyl

TPHL = Terphenyl-d14

PHL = Phenol-d5 (Surr)

2FP = 2-Fluorophenol

TBP = 2,4,6-Tribromophenol

## Method: Organotins/GCMS - Organotins (GC/MS)

**Matrix: Water** Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		TPTT	
Lab Sample ID	Client Sample ID	(15-150)	
600-185597-1	WW-20190516-002-Day14	84	
LCS 200-143288/2-A	Lab Control Sample	79	
MB 200-143288/1-A	Method Blank	79	
Surrogate Legend			
TPTT = Tripentyltin			

## Method: 608 - Organochlorine Pesticides in Water

**Matrix: Water** Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TCX1 (32-143)	DCBP1 (36-144)				
600-185597-1	WW-20190516-002-Day14	99	95				
LCS 600-265445/4-A	Lab Control Sample	89	93				
LCSD 600-265445/5-A	Lab Control Sample Dup	88	136				
MB 600-265445/1-A	Method Blank	91	101				

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

Client: Cardno, Inc

Project/Site: WW-20190516-002-Day14

Job ID: 600-185597-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 560-162934/1-A

**Matrix: Water** 

Analysis Batch: 162947

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 162934

•	MB	MB						•	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.861	U	10.0	0.861	ug/L		05/23/19 15:00	05/24/19 13:43	1

	MB MB	3			
Surrogate	%Recovery Qu	alifier Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	81	26 - 120	05/23/19 15:00	05/24/19 13:43	1
2-Fluorobiphenyl	75	22 - 120	05/23/19 15:00	05/24/19 13:43	1
Terphenyl-d14	82	10 - 134	05/23/19 15:00	05/24/19 13:43	1
Phenol-d5 (Surr)	75	10 - 120	05/23/19 15:00	05/24/19 13:43	1
2-Fluorophenol	71	10 - 120	05/23/19 15:00	05/24/19 13:43	1
2,4,6-Tribromophenol	72	24 - 131	05/23/19 15:00	05/24/19 13:43	1

Lab Sample ID: LCS 560-162934/2-A

**Matrix: Water** 

**Analysis Batch: 162947** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA **Prep Batch: 162934** 

%Rec.

Spike LCS LCS Analyte Added Result Qualifier Limits Unit %Rec 2,4,5-Trichlorophenol 200 77 50 - 120 154.9 ug/L

LCS LCS Surrogate %Recovery Qualifier Limits Nitrobenzene-d5 26 - 120 79 2-Fluorobiphenyl 77 22 - 120 Terphenyl-d14 82 10 - 134 Phenol-d5 (Surr) 75 10 - 120 2-Fluorophenol 68 10 - 120 2,4,6-Tribromophenol 24 - 131 79

Lab Sample ID: LCSD 560-162934/3-A

**Matrix: Water** 

**Analysis Batch: 162947** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA **Prep Batch: 162934** 

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2,4,5-Trichlorophenol	200	166.0		ug/L		83	50 - 120	7	40.0

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Nitrobenzene-d5	80		26 - 120
2-Fluorobiphenyl	77		22 - 120
Terphenyl-d14	84		10 - 134
Phenol-d5 (Surr)	77		10 - 120
2-Fluorophenol	74		10 - 120
2,4,6-Tribromophenol	83		24 - 131

## Method: Organotins/GCMS - Organotins (GC/MS)

Lab Sample ID: MB 200-143288/1-A

**Matrix: Water** 

**Analysis Batch: 143571** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 143288

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Tributyltin 0.0450 U 0.0450 0.0450 ug/L 05/22/19 13:35 05/30/19 13:31

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15 - 150

LCS LCS

0.4532

Result Qualifier

Spike

Added

Limits

15 - 150

0.445

Job ID: 600-185597-1

Dil Fac

Client: Cardno, Inc

Project/Site: WW-20190516-002-Day14

Method: Organotins/GCMS - Organotins (GC/MS) (Continued)

	MB	MB			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed

Lab Sample ID: LCS 200-143288/2-A

**Matrix: Water** 

**Analysis Batch: 143571** Analyte

Tributyltin LCS LCS

Surrogate %Recovery Qualifier Tripentyltin

**Client Sample ID: Lab Control Sample** 

05/22/19 13:35 05/30/19 13:31

Prep Type: Total/NA **Prep Batch: 143288** 

%Rec. Limits

D %Rec

Unit

102 ua/L

30 - 150

Method: 608 - Organochlorine Pesticides in Water

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Lab Sample ID: MB 600-265445/1-A

**Matrix: Water** 

Tripentyltin

**Analysis Batch: 265507** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA **Prep Batch: 265445** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Dicofol 0.100 U 0.100 0.100 ug/L 05/20/19 11:59 05/21/19 12:03 Mirex 0.0100 U 0.100 0.0100 ug/L 05/20/19 11:59 05/21/19 12:03

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	91		32 - 143	05/20/19 11:59	05/21/19 12:03	1
DCB Decachlorobiphenyl	101		36 - 144	05/20/19 11:59	05/21/19 12:03	1

LCS LCS

Lab Sample ID: LCS 600-265445/4-A

**Matrix: Water** 

**Analysis Batch: 265507** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA **Prep Batch: 265445** 

%Rec.

Prep Type: Total/NA

Prep Batch: 265445

Spike Analyte Added Result Qualifier D %Rec Limits Unit Dicofol 2.00 3.080 70 - 130 ug/L 154 Mirex 2.00 1.925 ug/L 96

LCS LCS

Surrogate	%Recovery Qua	alifier Limits
Tetrachloro-m-xylene		32 - 143
DCB Decachlorobiphenyl	93	36 - 144

**Client Sample ID: Lab Control Sample Dup** 

**Matrix: Water** 

**Analysis Batch: 265507** 

Lab Sample ID: LCSD 600-265445/5-A

LCSD LCSD **RPD** Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Dicofol 2.00 3.201 \* ug/L 160 70 - 130 Mirex 2.00 2.163 ug/L 108 12

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
Tetrachloro-m-xylene	88	32 - 143
DCB Decachlorobiphenvl	136	36 - 144

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## **QC Sample Results**

Client: Cardno, Inc Job ID: 600-185597-1

Project/Site: WW-20190516-002-Day14

Method: 531.1 - Carbamate Pesticides (HPLC)

Lab Sample ID: MB 680-571548/4 **Client Sample ID: Method Blank** 

**Matrix: Water** 

Analyte Carbaryl

Analysis Batch: 571548

MB	MB							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
0.250	U	2.50	0.250	ug/L			05/24/19 14:26	1

Lab Sample ID: LCS 680-571548/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 571548

_	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Carbaryl	 10.0	7.601	*	ug/L		76	80 - 120	 -

Lab Sample ID: LCSD 680-571548/6 **Client Sample ID: Lab Control Sample Dup** Prep Type: Total/NA **Matrix: Water** 

Analysis Batch: 571548									
_	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Carbaryl	 10.0	8.951		ug/L		90	80 - 120	16	20

Prep Type: Total/NA

Client: Cardno, Inc Job ID: 600-185597-1

Project/Site: WW-20190516-002-Day14

## GC/MS Semi VOA

<b>Prep</b>	<b>Batch</b>	: 143288
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-185597-1	WW-20190516-002-Day14	Total/NA	Water	3510C	
MB 200-143288/1-A	Method Blank	Total/NA	Water	3510C	
LCS 200-143288/2-A	Lab Control Sample	Total/NA	Water	3510C	

#### **Analysis Batch: 143571**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-185597-1	WW-20190516-002-Day14	Total/NA	Water	Organotins/GCM S	143288
MB 200-143288/1-A	Method Blank	Total/NA	Water	Organotins/GCM S	143288
LCS 200-143288/2-A	Lab Control Sample	Total/NA	Water	Organotins/GCM S	143288

#### **Prep Batch: 162934**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Bat	ch
600-185597-1	WW-20190516-002-Day14	Total/NA	Water	CWA_Prep_CLL E	
MB 560-162934/1-A	Method Blank	Total/NA	Water	CWA_Prep_CLL E	
LCS 560-162934/2-A	Lab Control Sample	Total/NA	Water	CWA_Prep_CLL E	
LCSD 560-162934/3-A	Lab Control Sample Dup	Total/NA	Water	CWA_Prep_CLL E	

#### **Analysis Batch: 162947**

Lab Sample ID 600-185597-1	Client Sample ID WW-20190516-002-Day14	Prep Type Total/NA	Matrix Water	Method 625	Prep Batch 162934
MB 560-162934/1-A	Method Blank	Total/NA	Water	625	162934
LCS 560-162934/2-A	Lab Control Sample	Total/NA	Water	625	162934
LCSD 560-162934/3-A	Lab Control Sample Dup	Total/NA	Water	625	162934

#### **GC Semi VOA**

#### **Prep Batch: 265445**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-185597-1	WW-20190516-002-Day14	Total/NA	Water	608	
MB 600-265445/1-A	Method Blank	Total/NA	Water	3510C	
LCS 600-265445/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 600-265445/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### **Analysis Batch: 265507**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-185597-1	WW-20190516-002-Day14	Total/NA	Water	608	265445
MB 600-265445/1-A	Method Blank	Total/NA	Water	608	265445
LCS 600-265445/4-A	Lab Control Sample	Total/NA	Water	608	265445
LCSD 600-265445/5-A	Lab Control Sample Dup	Total/NA	Water	608	265445

#### HPLC/IC

#### **Analysis Batch: 571548**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-185597-1	WW-20190516-002-Day14	Total/NA	Water	531.1	
MB 680-571548/4	Method Blank	Total/NA	Water	531.1	

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## **QC Association Summary**

Client: Cardno, Inc Job ID: 600-185597-1

Project/Site: WW-20190516-002-Day14

## **HPLC/IC (Continued)**

#### **Analysis Batch: 571548 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-571548/5	Lab Control Sample	Total/NA	Water	531.1	
LCSD 680-571548/6	Lab Control Sample Dup	Total/NA	Water	531.1	

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#### **Lab Chronicle**

Client: Cardno, Inc Job ID: 600-185597-1

Project/Site: WW-20190516-002-Day14

Client Sample ID: WW-20190516-002-Day14

Lab Sample ID: 600-185597-1 Date Collected: 05/16/19 11:30 **Matrix: Water** 

Date Received: 05/17/19 15:40

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	CWA_Prep_CLLE			250 mL	1 mL	162934	05/23/19 15:00	OV56	TAL CC
Total/NA	Analysis	625		1			162947	05/24/19 15:28	GEF	TAL CC
Total/NA	Prep	3510C			960 mL	5 mL	143288	05/22/19 13:35	CSB	TAL BUR
Total/NA	Analysis	Organotins/GCMS		1			143571	05/30/19 14:14	DJB	TAL BUR
Total/NA	Prep	608			240 mL	5.0 mL	265445	05/20/19 15:01	LER	TAL HOU
Total/NA	Analysis	608		1			265507	05/21/19 15:28	JAL	TAL HOU
Total/NA	Analysis	531.1		1	1 mL	1 mL	571548	05/25/19 02:25	UI	TAL SAV

#### **Laboratory References:**

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990 TAL CC = Eurofins TestAmerica, Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673 TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

## **Accreditation/Certification Summary**

Client: Cardno, Inc Job ID: 600-185597-1

Project/Site: WW-20190516-002-Day14

#### Laboratory: Eurofins TestAmerica, Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program		<b>EPA Region</b>	<b>Identification Number</b>	Expiration Date
Texas	NELAP		6	T104704223-18-23	10-31-19
The following analytes	s are included in this reno	rt but the laboratory is	s not certified by the	e governing authority. This	s list may include analytes for whic
• ,	•	it, but the laboratory is	o not confined by the	s governing dutilonty. This	s list may include analytes for write
the agency does not of Analysis Method	•	Matrix	Analyti		silst may include analytes for write
the agency does not o	offer certification.	•	,	e	sist may include analytes for wife

## Laboratory: Eurofins TestAmerica, Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	<b>Expiration Date</b>
ANAB	DoD	<del></del>	L2336	02-25-20
Connecticut	State Program	1	PH-0751	09-30-19
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-01-20
Florida	NELAP	4	E87467	06-30-19 *
Minnesota	NELAP	5	050-999-436	12-31-19
New Hampshire	NELAP	1	2006	12-18-19
New Jersey	NELAP	2	VT972	06-30-19 *
New York	NELAP	2	10391	04-01-20
Pennsylvania	NELAP	3	68-00489	04-30-20
Rhode Island	State Program	1	LAO00298	12-30-19
US Fish & Wildlife	Federal		LE-058448-0	07-31-19
USDA	Federal		P330-11-00093	07-24-20
Vermont	State Program	1	VT-4000	12-31-19
Virginia	NELAP	3	460209	12-14-19

#### Laboratory: Eurofins TestAmerica, Corpus Christi

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority Oklahoma	Program State Program	EPA Region	Identification Number 2018-070	Expiration Date 08-31-19
Texas	NELAP	6	T104704210-19-23	03-31-20
USDA	Federal		P330-18-00314	10-31-21

#### Laboratory: Eurofins TestAmerica, Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority Texas	Program NELAP		EPA Region	T104704185-19-12	Expiration Date 11-30-19
The following analyte the agency does not	•	rt, but the laboratory is	not certified by the	e governing authority. This	list may include analytes for w
Analysis Method	Prep Method	Matrix	Analyt	te	

Eurofins TestAmerica, Houston

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<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

#### **TestAmerica Canton**

4101 Shuffel Street NW North Canton, OH 44720 **Chain of Custody Record** 

Phone (330) 497-9396 Fax (330) 497-0772																
Client Information	Sampler:			Lab	PM:							Carrier Tracking No(s	3):		COC No:	
Client Contact:	Phone:			E-M	lait:										Page: Page 1 of 1	
Cardno					1				Ana	alysis	Reg	uested			Job#:	
Address: 121 Continental Dr Se 308	Due Date Requeste	ed:			17	П	737	30			111		ПП		Preservation Code	es:
City: Newark	TAT Requested (da	iys):			11		1	5	S000 0000	150	List				A - HCL B - NaOH C - Zn Acetate	M - Hexane N - None O - AsNaO2
State, Zip: DE 19713						-	+ ~	3	8	8 8	54	7			D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3
Phone:	PO#:						List	1	0	1 mg	E.F				F - MeOH G - Amchlor H - Ascorbic Acid	R - Na2S2SO3 S - H2SO4 T - TSP Dodecahydrate
Email: lori, Stone e Cardno, com Project Name:	WO#:				OI No	(oN	50	1 =	W.	9	ь				I - Ice J - DI Water	U - Acetone V - MCAA
Project Name: Dear Park Fire Site: 002	Project#:				Sample (Yas or No.	6	376	arba	S. SECTION	8	366			containers	K - EDTA L - EDA	00
Site: 002	SSOW#:				ampl	SOC	7 0	9	D.	Z					Other:	185
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sesolid, Orwaste/oil,	d Filtered		PUSCIA	537.1	A CORPORATION OF THE PARTY OF T	20100	695.			Total Number of	Special	597 Chain o
bample identification	Sample bate		Preservat		X	X			B					Ż	Special	for the second
WW-20190516-00Z-Day 14	1130	Slupe	Comp	MM	H		XX	X	CAN V	XX	X					ustody
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Possible Hazard Identification						Sam	ple Dis	posal	I (A fe	ee may	/ be as	ssessed if samp	les are ret	aine	d longer than 1 i	month)
Non-Hazard Flammable Skin Irritant Poisc	on B Unkno	own $\square_F$	Radiological				Retur	п То С	Client		□ Di	isposal By Lab			ve For	_ Months
Deliverable Requested: I, II, III, IV, Other (specify)					_		ial Inst	ruction	ns/QC	Requi	rement	ts:				
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	Date/Time:						111	9	7				25/10/	19	14:30	Company
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Religious by:	Date/Time:			company			Received		11				e/Time;			Company
Custody Seals Intact: Custody Seal No.:						0	Cooler Te	mperati	ule(s) °	C and O	ther Rer	marks:				

Loc: 600

# Sample Receipt Chr 185597



eceived: Cardno JOB NUMBER: CLIENT: UNPACKED BY: CARRIER/DRIVER: Custody Seal Present: Number of Coolers Received: TYES NO Observed Temp Corrected Temp Temp Therm Them Cooler ID Trip Blank ID CF Blank 676 0.2 CF = correction factor Samples received on ice? YES LABORATORY PRESERVATION OF SAMPLES REQUIRED: YES Base samples are>pH 12: YES NO Acid preserved are<pH 2: YES NO pH paper Lot #\_ VOA headspace acceptable (5-6mm): TYES NO NA NO Did samples meet the laboratory's standard conditions of sample acceptability upon receipt? COMMENTS:

HS-SA-WI-013

Rev. 3; 07/01/2014

#### **Eurofins TestAmerica, Houston**

6310 Rothway Street Houston, TX 77040 **Chain of Custody Record** 



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Environment Testing TestAmerica

Phone (713) 690-4444 Fax (713) 690-5646									600-	1855	97 Ch	ain d	of Cu	etod:	, er merk <b>e</b> el		1111			
Client Information (Sub Contract Lab)	Sampler:				er, Dea	an A								siouy				577.1		
Client Contact: Shipping/Receiving	Phone:			E-Mail dean		@test	tame	ricainc.	com			tate o	or Ongo S	1				Page 1 of 1		
Company: TestAmerica Laboratories, Inc.					Accredi NELA			red (See	note):									Job #:	180	
Address:	Due Date Requests	ed:			INLLX	1E	zxa5							_			_	600-185597-1 Preservation Cod	es:	
30 Community Drive, Suite 11,	5/22/2019								\nal	ysis	Requ	ıest	ed					A - HCL	M - Hexane	
City: South Burlington	TAT Requested (da	iys):					ļ											B - NaOH C - Zn Acetate	N - None O - AsNaO2	
State, Zip: VT, 05403																	Ł¥.	D - Nitric Acid E - NaHSO4 F - MeOH	P - Na2O4S Q - Na2SO3 R - Na2S2O3	
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:				· je	T Only											30	G - Amchlor H - Ascorbic Acid	S - H2SO4 T - TSP Dodecal	hydrate
Email:	WO #:				or No	OD) TE											g	I - Ice J - DI Water	U - Acetone V - MCAA	
Project Name: WW-20190516-002-Day14	Project #: 60010840				è.(Yes	OC (M											containers	K - EDTA L - EDA	W - pH 4-5 Z - other (specify	y)
Site:	SSOW#:				Sampl	GCMS/3510C (MOD) TBT											oj con	Other:		
			Type (	Matrix W=water, S=solid,	Filtered	Organotins_GCI											Number			
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time		waste/oil,	Field	Organ	i										Total	Special In:	structions/No	te:
		$\nearrow\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	Preservation	Code:	XX	2.4								4	李 秀	1	X	iged .		
WW-20190516-002-Day14 (600-185597-1)	5/16/19	11:30 Central	,	Vater	Ц.	X											2			
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Note: Since laboratory accreditations are subject to change, TestAmerica Laborat currently maintain accreditation in the State of Origin listed above for analysis/test Laboratories, Inc. attention immediately. If all requested accreditations are currer	ts/matrix being analyz	ed, the sample	es must be shipped	back to the	TestAm	nerica la	aborat	ory or oth	ner inst	truction	ries. Th	is san e provi	nple sh ided. <i>A</i>	ipmen iny cha	t is forw anges t	varded o accre	under editation	r chain-of-custody. If t on status should be br	he laboratory doe ought to TestAme	es not erica
Possible Hazard Identification					Sa					may	be as	sess	sed if	sam	ples a			ed longer than 1	month)	
Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliver	abla Banki 1	·		C 22			To Clie			D <sub>D</sub>	spos	al By	Lab		لبا	Arch	nive For	Months	
		<u>.</u>					irisuu	icuoris/	QC P	kequir	emen									
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Relinquished by:	Date/Time:	16		pany	1	1/4	ved b			14					ate/Tim		19	10:37	1-4 Bu	r(
U	Date/Time-					Ľ		•											Company	
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Custody Seals Intact: Custody Seal No.: 732375						Coole	er Tem	perature(	(s) °C	and Oth	her Rem	arks:		u						
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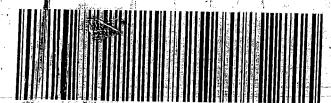


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NC BTVA

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## Eurofins TestAmerica, Houston

6310 Rothway Street

Houston, TX 77040 Phone (713) 690-4444 Fax (713) 690-5646

# **Chain of Custody Record**



🔅 eurofins

Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler			1000000	Lab PM. Joiner, Dean A				Carrier Track	ing No(s)		COC No: 600-39583.1	
Client Information (Sub Contract Lab) Client Contact	Phone			E-Ma	il'.				State of Origi	n.		Page	
Shipping/Receiving Company				dear			mericainc.con		Texas			Page 1 of 1	
TestAmerica Laboratories, Inc.						AP - Tex	equired (See note as	e)				Job # 600-185597-1	
Address:	Due Date Requeste	d:										Preservation Co	des:
5102 LaRoche Avenue,	5/22/2019				L	_	Ana	alysis R	equested			A - HCL	M - Hexane
City: Savannah	TAT Requested (da	ys):										B - NaOH C - Zn Acetate	N - None O - AsNaO2
State, Zip. GA, 31404												D - Nitric Acid E - NaHSO4 F - MeOH	P - Na2O4S Q - Na2SO3 R - Na2S2O3
Phone 912-354-7858(Tel) 912-352-0165(Fax)	PO#				1							G - Amchlor H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate
Email	WO#				or No	(0)						I - Ice J - DI Water	U - Acetone V - MCAA
Project Name	Project #				Sample (Yes	MS/MSD (Yes or No)	111				containers	K - EDTA L - EDA	W - pH 4-5 Z - other (specify)
WW-20190516-002-Day14 Site	60010840 SSOW#		_	_	aldi	Yes					onta	Other:	
					San	MSD				111	6		
		Sample	Sample Type (C=comp,	Matrix (Wewater, Sesolid, O=waste/oil,		Perform MS/III 531.1/ Carbaryl					Total Number		
Sample Identification - Client ID (Lab ID)	Sample Date	Time	G=grab) 8		L.	2 8		-			P	Special I	nstructions/Note:
		11:30	Preservati	on Code:	X	X					X	THE STATE OF	
WW-20190516-002-Day14 (600-185597-1)	5/16/19	Central		Water	$\parallel$	X					2		
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Note: Since laboratory accreditations are subject to change, TestAmerica currently maintain accreditation in the State of Origin listed above for anal Laboratories, Inc. attention immediately. If all requested accreditations are	lysis/tests/matrix being analyze	ed, the sample	es must be shipp	ed back to the	e Test	America lab	oratory or other in	nstructions					
Possible Hazard Identification					1			ee may b			7	ed longer than	
Unconfirmed  Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	able Rank	2		- 1		urn To Client structions/QC	Requirer	Disposal By	Lab	Arch	ive For	Months
Empty Kit Relinquished by:		Date:			Tim					of Shipment			
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Relinquished by:	Date/Tinle	10	00	ompany		Receive	1	The	1	5-2/- Date/Time	19	0856	Company Company
Relinquished by	Date/Time		C	ompany		Receive	ed by			Date/Time	-		Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No						Cooler	Temperature(s) °(	C and Other	Remarks:		)1	6/13.7	

Ver: 01/16/2019













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Client: Cardno, Inc Job Number: 600-185597-1

Login Number: 185597 List Source: Eurofins TestAmerica, Houston

List Number: 1

Creator: Crafton, Tommie S

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <a href="fig86">66mm (1/4").</a>	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required

Client: Cardno, Inc Job Number: 600-185597-1

Login Number: 185597

List Number: 2

Creator: Nye, Elizabeth A

List Source: Eurofins TestAmerica, Burlington

List Creation: 05/22/19 07:58 AM

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td>Lab does not accept radioactive samples</td>	True	Lab does not accept radioactive samples
The cooler's custody seal, if present, is intact.	True	732375
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1° C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: Cardno, Inc Job Number: 600-185597-1

List Number: 185597 List Source: Eurofins TestAmerica, Corpus Christi
List Number: 3 List Creation: 05/22/19 05:39 PM

Creator: Medellin, Alyssa L

Oreator. Wedenin, Aryssa L		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	False	NO COC
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.